DIRECT TESTIMONY

OF

SHEENA KIGHT

FINANCIAL ANALYST

FINANCE DEPARTMENT

FINANCIAL ANALYSIS DIVISION

ILLINOIS COMMERCE COMMISSION

INTERSTATE POWER COMPANY

PETITION FOR APPROVAL OF DELIVERY SERVICES TARIFFS

DOCKET NO. 01-0628

NOVEMBER 30, 2001

TABLE OF CONTENTS

WITNESS IDENTIFICATION ***1***

COST OF CAPITAL ***2***

CAPITAL STRUCTURE ***4***

COST OF LONG-TERM DEBT 9

COST OF PREFERRED STOCK 10

COST OF COMMON EQUITY 10

Sample Selection *11*

DCF Analysis *14*

Risk Premium Analysis *20*

Cost of Equity Recommendation *31*

OVERALL COST OF CAPITAL RECOMMENDATION 33

RESPONSE TO MR. BACALAO ***34***

MR. BACALAO'S SAMPLE 35

COMPARABLE EARNINGS 37

DCF ANALYSIS 39

RISK PREMIUM MODEL 41

CAPM ANALYSIS 42

Leverage Adjustment *42*

Risk Premium *45*

Witness Identification

Q. Please state your name and business address.

A. My name is Sheena Kight. My business address is 527 East Capitol Avenue, Springfield, Illinois 62701.

Q. By whom are you employed and in what capacity?

A. I am employed by the Illinois Commerce Commission ("Commission") as a Financial Analyst in the Finance Department of the Financial Analysis Division.

Q. Please describe your qualifications and background.

A. In May of 1998, I received a Bachelor of Business degree in Finance and Marketing from Western Illinois University in Macomb, Illinois. I earned a Master of Business Administration degree, with a concentration in Finance, also at Western Illinois University in May 2001. I have been employed by the Commission in my present

position since January of 2001.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony and accompanying schedules is to present my analysis of the cost of capital of, and recommend an overall rate of return for, the electric delivery service operations of Interstate Power Company ("IPC"). I will also respond to the direct testimony of Mr. Enrique Bacalao on the issue of cost of common equity.

Cost of Capital

Q. Please summarize your cost of capital findings.

A. The overall cost of capital for IPC equals 9.52%, as shown on Schedule 2.01.

Q. Why must one determine an overall cost of capital for a public utility?

A. Under the traditional regulatory model, the proper balance of ratepayer and shareholder interests occurs when the Commission authorizes a public utility a rate of return on its rate base equal to its overall cost of capital. If the authorized rate of return on rate base exceeds the overall cost of capital, then ratepayers bear the burden of excessive prices. Conversely, if the authorized rate of return on rate base is lower than the overall cost of capital, then the utility may be unable to raise capital at a reasonable cost. Ultimately, the utility's inability to raise sufficient capital would impair service quality. Therefore, ratepayer interests are served best when the authorized rate of return on rate base equals the overall cost of capital.

In authorizing a rate of return on rate base equal to the overall cost of capital, all costs of service are assumed reasonable and accurately measured. If unreasonable costs continue to be incurred, or if any reasonable cost of service component is measured inaccurately, then the allowed rate of return on rate base will not balance ratepayer and investor interests.

Q. Please define the overall cost of capital for a public utility.

A. The overall cost of capital equals the sum of the component costs of the capital

structure (i.e., debt, preferred stock, and common equity) after each is weighted by its proportion to total capital. It represents the rate of return the utility needs to earn on its assets to satisfy contractual obligations to, or the market requirements of, its investors.

Capital Structure

Q. What capital structure does IPC propose for setting rates?

A. IPC proposes using its December 31, 2000, capital structure, comprised of 39.02% long-term debt, 8.43% preferred stock, and 52.55% common equity, as revised on November 5, 2001, and shown on Schedule 2.01.[1]

Q. Is this capital structure appropriate for setting rates?

A. Yes.

Q. Does capital structure affect the overall cost of capital?

A. Yes. Financial theory suggests capital structure affects the value of a firm and,

[1] IPC's response to Staff data request FIN-1, DST.4010 Schedule D-1.

therefore, its cost of capital, to the extent it affects the expected level of cash flows that accrue to third parties (i.e., other than debt and stock holders). Employing debt as a source of capital reduces a company's income taxes,[2] thereby reducing the cost of capital; however, as reliance on debt as a source of capital increases, so does the probability of bankruptcy. As bankruptcy becomes more probable, expected payments to attorneys, trustees, accountants and other third parties increase. Simultaneously, the expected value of the income tax shield provided by debt financing declines. Beyond a certain point, a growing dependence on debt as a source of funds increases the overall cost of capital. Therefore, the Commission should not determine the overall rate of return from a utility's actual capital structure if it determines that the capital structure adversely affects the overall cost of capital.

An optimal capital structure would minimize the cost of capital and maintain a utility's financial integrity. Unfortunately, determining whether a capital structure is optimal remains problematic because (1) the cost of capital is a continuous function of the capital structure, rendering its precise measurement along each segment of the range of possible capital structures problematic; (2) the optimal capital structure is a function of operating risk, which is dynamic; and (3) the relative costs of the different types of capital vary with dynamic market conditions. Consequently, one should determine whether the capital structure is consistent with the financial

[2] The tax advantage debt has over equity at the corporate level is partially offset at the individual investor level. Debt investors receive returns largely in the form of current income (i.e., interest). In contrast, equity investors receive returns in the form of both current income (i.e., dividends) and capital appreciation (i.e.,

strength necessary to access the capital markets under all conditions, and if so, whether the cost of that financial strength is reasonable.

Towards that end, I compared the Company's December 31, 2000, capital structure to industry standards. Standard & Poor's ("S&P") categorizes debt securities on the basis of the risk that a company will default on its interest or principal payment obligations. The resulting credit rating reflects both the operating and financial risks of a utility.[3] Electric utilities that have a 'A+' credit rating have a mean total debt ratio of 58.46%.[4,5] Gas distribution utilities that have a 'A+' credit rating have a mean total debt ratio of 53.28%. The mean common equity ratio for A+-rated electric utilities equals 37.77%. The mean common equity ratio for S&P A+-rated gas distribution utilities equals 46.63%. The above numbers are shown in Table 1 below for comparative purposes.

capital gains). Taxes on capital gains are lower than taxes on interest and dividend income because capital gains tax rates are lower and taxes on capital gains are deferred until realized.

[2] *Standard & Poor's Utility Financial Statistics*, June 1999, p. 3; Standard & Poor's Utilities Rating Service: Industry Commentary, May 20, 1996, p. 1.

[4] IPC's credit rating was A+ as of October 14, 2001.

[5] *S& P Utility Compustat*.

TABLE 1: Capital Structure Ratios

	A+ rated Electric Utilities		A+ rated Gas Distributors		IPC December 31, 2000
	Mean	Standard Deviation	Mean	Standard Deviation	
Long-Term Debt Ratio	58.46%	13.66%	53.28%	6.74%	39.02%
Equity Ratio	37.77%	14.82%	46.63%	6.78%	52.55%

IPC's December 31, 2000, total debt and equity ratios are reasonably close to the mean total debt and equity ratios for S&P A+ rated electric utilities and gas distributors. The common equity ratio, while on the high end, is within one standard deviation from the mean common equity ratios for S&P A+-rated electric utilities and gas distributors. According to S&P, an obligor rated 'A' has a strong capacity to meet its financial commitments but to a lesser degree than higher-rated obligors.[6] The above suggests that the December 31, 2000 capital structure for IPC is commensurate with a very strong but not excessive degree of financial strength. Therefore, I conclude the Company's proposed capital structure comprising 39.02% long-term debt, 8.43% preferred stock, and 52.55% common equity, is reasonable for establishing rates. That capital structure appears on Schedule 2.01.

Q. Standard and Poor's currently rates IPC A-.[7] Why did you compare the IPC's

[6] *Standard & Poor's Utility Financial Statistics*, June 1999, p. 4.
[7] Ferara, William, "Interstate Power Company", www.ratingsdirect.standardandpoors.com, November 13, 2001

capital ratios to those of A+ rated utilities?

A. On October 15, 2001 Standard and Poor's downgraded IPC to A- from A+. The downgrade was a result of IPC's parent company, Alliant Energy Corporation's ("Alliant") "increased focus on expanding its higher-risk nonregulated businesses."[8]

Section 9-230 of the Illinois Public Utilities Act (220 ILCS 5/9-230 *et seq*., "Act") states that:

> In determining a reasonable rate of return upon investment for any public utility in any proceeding to establish rates or charges, the Commission shall not include any incremental risk or increased cost of capital which is the direct or indirect result of the public utility's affiliation with unregulated or non-utility companies.

Therefore, it would be inappropriate to base IPC's allowed rate of return on the basis of it's A- credit rating since that credit rating is due to its affiliation with unregulated or non-utility companies.

Q. Should short-term debt be included in the capital structure of IPC?

A. No. Short-term debt is not currently a source of financing for IPC's rate base

[8] Ferara, William, "Ratings on Alliant Energy Corp. and Subsidiaries Lowered", www.ratingsdirect.standardandpoors.com, October 17, 2001

investments.

Q. Should preferred stock be included in the capital structure of IPC?

A. Yes. IPC reported a balance of $36,558,117 on preferred securities outstanding as of December 31, 2000.[9]

Cost of Long-Term Debt

Q. What is the embedded cost of long-term debt for IPC?

A. As of December 31, 2000, the embedded cost of long-term debt was 7.96%, as shown on Schedule 2.02.

[9] IPC's FERC Form 1 Annual Report for the year ended December 31, 2000. p 250-254a

Cost of Preferred Stock

Q. What is the embedded cost of preferred stock for IPC?

A. IPC's embedded cost of preferred stock is 6.81%, as shown on Schedule 2.03.

Cost of Common Equity

Q. What is IPC's cost of common equity?

A. My analysis indicates that the cost of common equity for IPC's electric delivery service operations is 11.14%.

Q. How did you measure the investor-required rate of return on common equity for IPC's electric delivery service operations?

A. I measured the investor-required rate of return on common equity for IPC's electric delivery service operations with the discounted cash flow ("DCF") and risk premium

models. Since IPC does not have market-traded common stock, DCF and risk premium models cannot be applied directly to IPC, therefore, I applied both models to a sample of integrated electric utility companies and a sample of gas distribution companies. Rate of return witnesses in other proceedings have suggested that the risks of gas and electric distribution companies are similar.[10] I have included a gas distribution sample as well.

Sample Selection

Q. How did you select an electric sample?

A. Since this proceeding will set rates for electric delivery services, under ideal circumstances the sample should reflect the risks associated with the provision of those services. Unfortunately, few, if any, market-traded electric utilities in the United States provide only electric delivery services. Therefore, I selected an electric sample based on the following criteria. First, I began with a list of all domestic publicly traded companies assigned an industry number of 4911 or 4931 (i.e., electric utilities) within *Standard & Poor's Utility Compustat*. Second, I removed any company that derived less than 70% of its revenue from electric services, based on 2000 data. Third, I removed any company that had an S&P debt

[10] ComEd Exhibit No. 8.0, Direct Testimony of Daniel E. Thone, Docket No. 01-0423, June 1, 2001, p. 7.; MidAmerican Exhibit No. 4.0, Direct Testimony of Dr. Roger A. Morin, PhD, Docket No. 01-0444, June 8, 2001, pp. 5, 19-21.

rating other than AA, AA-, A+, A, or A-. Fourth, I removed any company that had neither Zacks Investment Research ("Zacks") nor Institutional Brokers Estimate System ("IBES") long-term growth rates. Fifth, I removed companies involved in pending significant mergers or acquisitions. Sixth, I removed companies without Value Line beta estimates. The remaining companies, Allegheny Energy Inc., Ameren Corp., American Electric Power, Consolidated Edison, Empire District Electric Company, FPL Group Inc., Great Plains Energy, Idacorp Inc., and NSTAR, compose my Electric sample.

Q. How did you select a gas sample?

A. First, I began with a list of all domestic publicly traded companies assigned an industry number of 4924 within *Standard & Poor's Utility Compustat*. Second, I removed any company that derived less than 70% of its revenue from gas services, based on 2000 data. Third, I removed any company that had an S&P debt rating outside the range of AA through A-. Fourth, I removed any company that had neither Zacks nor IBES long-term growth rates. Fifth, I removed companies involved in pending significant mergers or acquisitions. Finally, I removed companies without Value Line beta estimates. The remaining companies, AGL Resources Inc., Atmos Energy Corp., Laclede Gas Co., Nicor Inc., Northwest Natural Gas Co.,

Peoples Energy Corp., Piedmont Natural Gas Co., and WGL Holdings Inc., compose my Gas sample.

Q. Please discuss the criteria by which you selected your samples.

A. The percentage of revenues from electric or gas sales is an operating risk measure. S&P credit ratings measure the risk that a company will default on financial obligations, and are a function of both operating and financial risk.[11] By limiting the sample to companies with a high percentage of revenue from electric or gas sales and S&P credit ratings similar to IPC pre October 15, 2001 credit rating, the samples together should approach the risk of the electric delivery services operations of IPC while excluding risks associated with IPC's affiliation with non-utility and unregulated companies. In addition, removing companies that have pending significant mergers ensures that merger premiums do not distort the results of my analysis.

Q. In past rate cases Staff has utilized a general utility sample selected on the basis of a quantitative comparison in risk to the utility. Did you

[11] Standard & Poor's, *Utilities Rating Service: Financial Statistics, Twelve Months Ended June 30, 1998*, p. 1; Standard & Poor's, *Utilities Rating Service: Industry Commentary*, May 20, 1996, p. 1.

include such a sample in your analysis?

A. No. Recent industry restructuring has rendered questionable the measurement of financial and operating risk with historical data for many electric utilities.

DCF Analysis

Q. Please describe DCF analysis.

A. For a utility to attract common equity capital, it must provide a rate of return on common equity sufficient to meet investor requirements. DCF analysis establishes a rate of return directly from investor requirements. A comprehensive analysis of a utility's operating and financial risks becomes unnecessary to implement a DCF analysis since the market price of a utility's stock already embodies the market consensus of those risks.

According to DCF theory, a security price equals the present value of the cash flow investors expect it to generate. Specifically, the market value of common stock equals the cumulative value of the expected stream of future dividends after each is

discounted by the investor-required rate of return.

Q. Please describe the DCF model with which you measured the investor-required rate of return on common equity.

A. As it applies to common stocks, DCF analysis is generally employed to determine appropriate stock prices given a specified discount rate. Since a DCF model incorporates time-sensitive valuation factors, it must correctly reflect the timing of the dividend payments that stock prices embody. As such, incorporating stock prices that the financial market sets on the basis of quarterly dividend payments into a model that ignores the time value of quarterly cash flows constitutes a misapplication of DCF analysis.

The companies in both samples pay dividends quarterly; therefore, I applied a constant-growth DCF model that measures the annual required rate of return on common equity as follows:

$$k = \frac{\sum_{q=1}^{4} D_{0,q}(1+g)(1+k)^{1-[x+0.25(q-1)]}}{P} + g.$$

where P ≡ the current stock price;

$D_{0,q}$ ≡ the last dividend paid at the end of quarter q, where q = 1 to 4;

k ≡ the cost of common equity;

x ≡ the elapsed time between the stock observation and first dividend payment dates, in years; and

g ≡ the expected dividend growth rate.

That model assumes dividends will grow at a constant rate, and the market value of common stock (i.e., stock price) equals the sum of the discounted value of each dividend.

Q. How did you estimate the growth rate parameter?

A. Determining the market-required rate of return with the DCF methodology requires a growth rate that reflects the expectations of investors. Although the current market price reflects aggregate investor expectations, market-consensus expected growth rates cannot be measured directly. Therefore, I measured market-consensus expected growth indirectly with growth rates forecasted by securities analysts that are disseminated to investors.

IBES and Zacks summarize and publish the earnings growth expectations of

financial analysts that the research departments of investment brokerage firms employ. To measure market-consensus expected growth, I averaged the IBES and Zacks growth rate estimates. Schedule 2.04 presents the analyst growth rate estimates for the companies in the samples.

Q. How did you measure the stock price?

A. A current stock price reflects all information that is available and relevant to the market; thus, it represents the market's assessment of the common stock's current value. I measured each company's current stock price with its closing market price from November 14, 2001. Those stock prices appear on Schedule 2.05.

Since current stock prices reflect the market's current expectation of the cash flows the securities will produce and the rate at which those cash flows are discounted, an observed change in the market price does not necessarily indicate a change in the required rate of return on common equity. Rather, a price change may reflect investors' re-evaluation of the expected dividend growth rate. In addition, stock prices change with the approach of dividend payment dates. Consequently, when estimating the required return on common equity with the DCF model, one should

measure the expected dividend yield and the corresponding expected growth rate concurrently. Using an historical stock price along with current growth expectations or combining an updated stock price with past growth expectations would likely produce an inaccurate estimate of the market-required rate of return on common equity.

Q. Please explain the significance of the column titled "Next Dividend Payment Date" shown on Schedule 2.05.

A. Estimating year-end dividend values requires measuring the length of time between each dividend payment date and the first anniversary of the stock observation date. For the first dividend payment, that length of time is measured from the "Next Dividend Payment Date." Subsequent dividend payments occur in quarterly intervals.

Q. How did you estimate the next four expected quarterly dividends?

A. Most utilities declare and pay the same dividend per share for four consecutive quarters before adjusting the rate. Consequently, I assumed the dividend rate will

adjust during the same quarter it changed during the preceding year. If the utility did not change its dividend during the last year, I assumed the rate would change during the next quarter. The average expected growth rate was applied to the current dividend rate to estimate the expected dividend rate. Schedule 2.05 presents the current quarterly dividends. Schedule 2.06 presents the expected quarterly dividends.

Q. Based on your DCF analysis, what are the estimated required rates of return on common equity for the electric sample and the gas sample?

A. The DCF analysis estimated required rates of return on common equity of 12.58% for the Electric sample and 11.31% for the Gas sample, as shown on Schedule 2.07. Those results represent averages of the DCF estimates for the individual companies in each sample, which are derived from the growth rates presented on Schedule 2.04, the stock price and dividend payment dates presented on Schedule 2.05, and the expected quarterly dividends presented on Schedule 2.06.

Risk Premium Analysis

Q. Please describe the risk premium model.

A. The risk premium model is based on the theory that the market-required rate of return for a given security equals the risk-free rate of return plus a risk premium associated with that security. A risk premium represents the additional return investors expect in exchange for assuming the risk inherent in an investment. Mathematically, a risk premium equals the difference between the expected rate of return on a risk factor and the risk-free rate. If the risk of a security is measured relative to a portfolio, then multiplying that relative measure of risk and the portfolio's risk premium produces a security-specific risk premium for that risk factor.

The risk premium methodology is consistent with the theory that investors are risk-averse. That is, investors require higher returns to accept greater exposure to risk. Thus, if investors had an opportunity to purchase one of two securities with equal expected returns, they would purchase the security with less risk. Conversely, if investors had an opportunity to purchase one of two securities with equal risk, they would purchase the security with the higher expected return. In equilibrium, two

securities with equal quantities of risk have equal required rates of return.

The Capital Asset Pricing Model ("CAPM") is a one-factor risk premium model that mathematically depicts the relationship between risk and return as:

$$R_j = R_f + b_j \times (R_m - R_f)$$

where R_j ≡ the required rate of return for security j;

R_f ≡ the risk-free rate;

R_m ≡ the expected rate of return for the market portfolio; and

b_j ≡ the measure of market risk for security j.

In the CAPM, the risk factor is market risk which is defined as risk that cannot be eliminated through portfolio diversification. To implement the CAPM, one must estimate the risk-free rate of return, the expected rate of return on the market portfolio, and a security or portfolio-specific measure of market risk.

Q. How did you estimate the risk-free rate of return?

A. I examined the suitability of the yields on three-month U.S. Treasury bills and thirty-

year U.S. Treasury bonds as estimates of the risk-free rate of return.

Q. Why did you examine the yields on U.S. Treasury bills and bonds as measures of the risk-free rate?

A. The proxy for the nominal risk-free rate should contain no risk premium and reflect similar inflation and real risk-free rate expectations to the security being analyzed through the risk premium methodology.[12] The yields of fixed income securities include premiums for default and interest rate risk. Default risk pertains to the possibility of default on principal or interest payments. Securities of the United States Treasury are virtually free of default risk by virtue of the federal government's fiscal and monetary authority. Interest rate risk pertains to the effect of unexpected interest rate fluctuations on the value of securities.

Since common equity theoretically has an infinite life, its market-required rate of return reflects the inflation and real risk-free rates anticipated to prevail over the long run. U.S. Treasury bonds, the longest term treasury securities, are issued with terms to maturity of thirty years; U.S. Treasury notes are issued with terms to maturity ranging from two to ten years; U.S. Treasury bills are issued with terms to

[12] Real risk-free rate and inflation expectations comprise the non-risk portion of a security's rate of return.

maturity ranging from ninety-one days to one year. Therefore, U.S. Treasury bonds are more likely to incorporate within their yields the inflation and real risk-free rate expectations that drive, in part, the prices of common stocks than either U.S. Treasury notes or Treasury bills.

However, due to relatively long terms to maturity, U.S. Treasury bond yields also contain an interest rate risk premium that diminishes their usefulness as measures of the risk-free rate. U.S. Treasury bill yields contain a smaller premium for interest rate risk. Thus, in terms of interest rate risk, U.S. Treasury bill yields more accurately measure the risk-free rate.

Q. Given that the inflation and real risk-free rate expectations reflected in the yields on U.S. Treasury bonds and the prices of common stocks are similar, does it necessarily follow that the inflation and real risk-free rate expectations that are reflected in the yields on U.S. Treasury bills and the prices of common stocks are dissimilar?

A. No. To the contrary, short and long-term inflation and real risk-free rate expectations, including those that are reflected in the yields on U.S. Treasury bills,

U.S. Treasury bonds, and the prices of common stocks, should equal over time. Any other assumption implausibly implies that the real risk-free rate and inflation are expected to systematically and continuously rise or fall.

Although expectations for short and long-term real risk-free rates and inflation should equal over time, in finite time periods, short and long-term expectations may differ. Short-term interest rates tend to be more volatile than long-term interest rates.[13] Consequently, over time U.S. Treasury bill yields are less biased (i.e., more accurate) but less reliable (i.e., more volatile) estimators of the long-term risk-free rate than U.S. Treasury bond yields. In comparison, U.S. Treasury bond yields are more biased (i.e., less accurate) but more reliable (i.e., less volatile) estimators of the long-term risk-free rate. Therefore, an estimator of the long-term nominal risk-free rate should not be chosen mechanistically. Rather, the similarity in current short and long-term nominal risk-free rates should be evaluated. If those risk-free rates are similar, then U.S. Treasury bill yields should be used to measure the long-term nominal risk-free rate. If not, some other proxy or combination of proxies should be used.

Q. What are the current yields on three-month U.S. Treasury bills and thirty-

[13] Fabozzi and Pollack, ed., *The Handbook of Fixed Income Securities*, Fourth Edition, Irwin, p. 789.

year U.S. Treasury bonds?

A. Three-month U.S. Treasury bills are currently yielding 1.89%. Thirty-year U.S. Treasury bonds are currently yielding 5.08%. Both estimates are derived from quotes for November 14, 2001.[14] Schedule 2.08 presents the published quotes and effective yields.

Q. Of the U.S. Treasury bill and bond yields, which is currently a better proxy for the long-term risk-free rate?

A. In terms of the gross domestic product ("GDP") price index, DRI-WEFA forecasts the inflation rate will average 3.0% annually during the 2001-2026 period.[15] In terms of the consumer price index ("CPI"), the *Survey of Professional Forecasters* ("Survey") forecasts the inflation rate will average 2.6% during the next ten years.[16] In terms of real GDP growth, DRI-WEFA forecasts the real risk-free rate will average 2.9% during the 2001-2026 period.[17] The Survey forecasts real GDP growth will average 3.3% during the next ten years.[18, 19] Those forecasts imply a

[11] The Federal Reserve Board, *Federal Reserve Statistical Release: Selected Interest Rates, H.15 Daily Update*, http://www.federalreserve.gov/releases/H15/update/, November 14, 2001.
[15] *The U.S. Economy: The 25-Year Focus*, DRI-DRI-WEFA, Summer Issue 2001, pp. A.60 and A.63.
[16] *Survey of Professional Forecasters*, Federal Reserve Bank of Philadelphia, www.phil.frb.org/files/spf/survq101.html, August 23, 2001. The *Survey* aggregates the forecasts of approximately thirty forecasters.
[17] *The U.S. Economy: The 25-Year Focus*, DRI-DRI-WEFA, Summer Issue 2001, pp. A.8-A.9.
[18] *Survey of Professional Forecasters*, Federal Reserve Bank of Philadelphia, www.phil.frb.org/files/spf/survq101.html, February 20, 2001.

long-term, nominal risk-free rate between 6.0% and 6.3%.[20] Therefore, DRI-WEFA and Survey forecasts of inflation and real GDP growth expectations indicate that the U.S. Treasury bond yield more closely approximates the long-term risk-free rate at this time. It should be noted, however, that the estimate from using the U.S. Treasury bond yield contains an upward bias due to the inclusion of an interest rate risk premium associated with its relatively long term to maturity.

Q. Please explain why the real risk-free rate and the GDP growth rate should be similar.

A. Risk-free securities provide a rate of return sufficient to compensate investors for the time value of money, which is a function of production opportunities, time preferences for consumption, and inflation.[21] In contrast, the real risk-free rate does not include a premium for inflation. The real GDP growth rate measures output of goods and services excluding inflation and, as such, also reflects both production and consumers' consumption preferences. Therefore, both the real GDP growth rate and the real risk-free rate of return should be similar since both are a function of

[19] Historically, the realized interest rate return premium averaged 1.4% during the last 75 years (Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, 2001 Yearbook*, p. 174).

[20] Nominal interest rates are calculated as follows:

$$r = (1 + R) \times (1 + i) - 1.$$

where r ≡ nominal interest rate;
R ≡ real interest rate; and
i ≡ inflation rate.

[21] Brigham and Houston, Fundamentals of Financial Management, 8th edition.

production opportunities and consumption preferences without the effects of a risk premium or an inflation premium.

Q. How was the expected rate of return on the market portfolio estimated?

A. The expected rate of return on the market was estimated by conducting a DCF analysis on the firms composing the S&P 500 Index ("S&P 500"). That analysis used dividends and closing market prices as of September 28, 2001 as reported in the October 2001 edition of *S&P Security Owner's Stock Guide*. Growth rate estimates were obtained from the September 2001 edition of *IBES Monthly Summary Data* and September 26, 2001 Zacks reports. Firms not paying a dividend as of September 28, 2001, or for which neither IBES nor Zacks growth rates were available were eliminated from the analysis. The resulting company-specific estimates of the expected rate of return on common equity were then weighted using market value data from Salomon Smith Barney, *Performance and Weights of the S&P 500: Third Quarter 2001*. The estimated weighted average expected rate of return for the remaining 359 firms, composing 81.86% of the market capitalization of the S&P 500, equals 15.30%.

Q. Has any financial market uncertainty resulting from the September 11, 2001 terrorist attacks affected the accuracy of your estimate of the required rate of return on the market?

A. No. The required rate of return on the market equaled 15.31% as of June 28, 2001. The small difference between the June 28 and September 28, 2001 estimates suggests little, if any, unusual post September 11, 2001 related impact on my estimate of the market return.

Q. How did you measure market risk on a security-specific basis?

A. Beta measures risk in a portfolio context. When multiplied by the market risk premium, a security's beta produces a market risk premium specific to that security. I used Value Line's beta estimates for the companies in my samples. The Value Line beta for a security is estimated with the following model using an ordinary least-squares technique:[22]

$$R_{j,t} = a_j + b_j \times R_{m,t} + e_{j,t}$$

where $R_{j,t}$ ≡ the return on security j in period t;

$R_{m,t}$ ≡ the return on the market portfolio in period t;

a_j ≡ the intercept term for security j;

[22] Statman, Meir, "Betas Compared: Merrill Lynch vs. Value Line", *The Journal of Portfolio Management*, Winter 1981.

b_j ≡ beta, the measure of market risk for security *j*; and

$e_{j,t}$ ≡ the residual term in period *t* for security *j*.

A beta can be calculated for firms with market-traded common stock. Value Line calculates its betas in two steps. First, the returns of each company are regressed against the returns of the New York Stock Exchange Composite Index to estimate a raw beta. The regression analysis employs 260 weekly observations of stock return data. Then, an adjusted beta is estimated through the following equation:

$$b_{adjusted} = 0.35 + 0.67 \times b_{raw}.$$

From the individual betas of the companies in each sample a single average beta was computed for each sample to be input into the CAPM.

Q. Why do you use an adjusted beta estimate?

A. I use an adjusted beta estimate because empirical tests of the CAPM suggest that the linear relationship between risk, as measured by raw beta, and return is flatter than the CAPM predicts. That is, securities with raw betas less than one tend to realize higher returns than the CAPM predicts. Conversely, securities with raw betas greater than one tend to realize lower returns than the CAPM predicts.

Adjusting the raw beta estimate towards the market mean value of 1.0 compensates for the observed flatness in the linear relationship between risk and return.[23] Securities with betas less than one are adjusted upwards thereby increasing the predicted required rate of return towards observed realized rates of return. Conversely, securities with betas greater than one are adjusted downwards thereby decreasing the predicted required rate of return towards observed realized rates of return. The adjustment represents an attempt to estimate a forward-looking beta.

Q. What are the beta estimates for the electric sample and the gas sample?

A. The average Value Line adjusted beta for the Electric sample equals 0.51. The average Value Line adjusted beta for the Gas sample equals 0.58.

Q. What required rate of return on common equity does the risk premium model estimate for the two samples?

[23] Litzenberger, Ramaswamy and Sosin, "On the CAPM Approach to the Estimation of A Public Utility's Cost of Equity Capital," *Journal of Finance*, May 1980, pp. 375-376.

A. The risk premium model estimates a required rate of return on common equity of 10.30% for the Electric sample and 10.96% for the Gas sample. The computation of those estimates appears on Schedule 2.08.

Cost of Equity Recommendation

Q. Based on your entire analysis, what is your estimate of the required rate of return on the common equity for IPC?

A. A thorough analysis of the required rate of return on common equity requires both the application of financial models and the analyst's informed judgment. An estimate of the required rate of return on common equity based solely on judgment is inappropriate. Nevertheless, because techniques to measure the required rate of return on common equity necessarily employ proxies for investor expectations, judgment remains necessary to evaluate the results of such analyses. Based on my analysis, in my judgment the investor-required rate of return on common equity for IPC equals 11.14%.

Q. Please summarize how you formed your recommendation for the investor-

required rate of return on common equity for IPC's electric delivery services.

A. My recommended rate of return on common equity, 11.14%, is the average of the DCF and CAPM results for the Gas Sample. The models from which the individual company estimates were derived are correctly specified and thus contain no source of bias. Moreover, I am unaware of bias in my proxy for investor expectations.[24] In addition, measurement error has been minimized through the use of a sample, since estimates for a sample as a whole are subject to less measurement error than individual company estimates.

When using samples to estimate the cost of equity of a target company, the risk level of the proxies should correspond to the risk level of the target company as closely as possible. Therefore, I analyzed the S&P credit ratings and business profile rankings of my sample groups to determine which more closely approximates the risk level of IPC. An S&P credit rating is a measure of a company's overall risk and the S&P business profile ranking is a measure of a company's business risk.[25] As noted previously, the appropriate credit rating for IPC is A+. In addition, S&P states that regulated distribution systems business profile assessments tend to fall within the 1-4 range.[26] Therefore, I compared my samples as they relate to a company with a corporate credit rating of AA- and a

[24] Except as discussed above in regard to U.S. Treasury bond yields as proxies for the long-term risk-free rate.

[25] S&P assigns companies business profiles ranging from 1 to 10 based on business risk, with 1 being the lowest business risk and 10 being the highest. Standard & Poor's, *Utilities & Perspectives*, June 21, 1999.

[26] Standard and Poor's, *Corporate Ratings Criteria*, 1998, p. 32.

business profile of 4.[27] The Gas Sample has an average S&P credit rating between A+ and AA- and an average business profile ranking of 3.25, which indicates it is reasonably representative of IPC's electric delivery service operations in terms of overall financial strength and business risk. In contrast, the Electric Sample has an average S&P credit rating of A and an average business profile ranking of 4.89, which indicates it is riskier than IPC's electric delivery service operations in terms of overall financial strength and business risk. Schedule 2.09 presents the S&P credit ratings and business position ratings of the samples. Therefore, I based my recommended rate of return on common equity on an average of the DCF and CAPM estimates for my Gas Sample.

Overall Cost of Capital Recommendation

Q. What is the overall cost of capital for IPC?

A. As shown on Schedule 2.01, IPC's overall cost of capital is 9.52%. The recommended estimate incorporates a cost of common equity of 11.14%.

[27] IPC was assigned an S&P business profile of 5, which reflects ownership of riskier generation assets. IPC's electric delivery services operations, exclusive of its riskier generation assets, would almost certainly be higher. Thus, a business profile of 4 was utilized.

Response to Mr. Bacalao

Q. Please summarize your evaluation of Mr. Bacalao's analyses of IPC's cost of common equity.

A. Mr. Bacalao measured IPC's investor required rate of return on common equity with a historical and forecasted comparable earnings model, a discounted cash flow (DCF) model, a risk premium model, and a capital asset pricing model (CAPM). He applied each model to a general sample.

Mr. Bacalao's analyses contain several errors that lead him to incorrectly estimate IPC's cost of common equity. The most significant flaws in Mr. Bacalao's analyses of IPC's cost of common equity are the following:

1. Mr. Bacalao's sample is not representative of the risk inherent in IPC's electric delivery service operations.

2. Mr. Bacalao's comparable earnings methodology does not provide valid estimates of the investor-required rate of return on IPC's common equity.

3. Mr. Bacalao's DCF analysis contains an unreasonable terminal growth rate.

4. Mr. Bacalao's risk premium model is based on the incorrect assumption that historical risk premiums are reasonable estimates of current investor-required risk premiums.

5. Mr. Bacalao's CAPM analysis is seriously flawed and does not accurately reflect the cost of equity for his sample.

Mr. Bacalao's Sample

Q. Please summarize how Mr. Bacalao determined his sample.

A. Mr. Bacalao's sample was developed from Value Line's 1,700-company universe by using Value Line's safety ranking as a screen.[28] Since Alliant Energy Corporation ("Alliant") has a Value Line safety ranking of "2", all firms with a safety ranking of "2" were included in Mr. Bacalao's general sample.

Q. Is Mr. Bacalao's use of the Value Line safety ranking appropriate for selecting his sample?

[28] Prepared Direct Testimony of Enrique Bacalao pp. 13-15.

A. No. The Value Line safety ranking is an imprecise measure of risk and its use as a screening technique is problematic as well. Value Line sorts its 1,700 company universe of stocks by a composite index score and then divides those 1,700 companies into five very broad segments from 1 (safest) to 5 (riskiest). There are 150 stocks rated 1 for safety; 250 are rated 2, above average for safety; 900 are rated 3, average for safety; 250 are rated 4, below average for safety; and 150 are rated 5, lowest for safety.[29] Stocks that are close to one another, such as numbers 150 and 151, may be assigned different safety numbers while stocks ranked far from each other, such as number 401 and 1300, may be assigned the same safety number.[30] Therefore, stocks with different assigned safety numbers may be more similar in risk than stocks ranked far apart with identical assigned safety numbers.

Q. Are there any other shortcomings in Mr. Bacalao's application of the Value Line safety rank?

A. Yes. IPC, as a non-publicly traded company, does not have a Value Line safety rank. Therefore, Mr. Bacalao used the safety rank of Alliant, which is IPC's parent company. Since Alliant has a subsidiary that is engaged in foreign distribution and domestic generation businesses, Alliant's safety rank reflects non-utility risks. In addition, since Value Line does not state to what degree that subsidiary affects

[29] Value Line Investment Survey, *A Subscriber's Guide*, p. 48.
[30] Arnold Bernhard, *Value Line Methods of Evaluating Common Stocks*, pp. 53 and 57.

common equity risks, the implied safety rank of IPC's electric delivery service operations on a stand-alone basis cannot be derived.[31] If Alliant's unregulated subsidiary affects its Value Line safety rank (as that subsidiary has affected Alliant's credit rating), any cost of common equity estimate calculated from a sample formed on that basis would reflect the risk of the unregulated affiliate. Therefore, Mr. Bacalao's samples should not be considered when determining IPC's cost of common equity for their electric delivery services.

Q. Has the inclusion of non-utility companies impacted Mr. Bacalao's cost of equity analyses?

A. Yes. I do not have a breakdown of company DCF return between utility and non-utility companies; however, the beta for Mr. Bacalao's entire sample equaled .77 while the betas for the electric and gas utilities within that sample averaged .52 and .55, respectively. The higher the beta, the greater the cost of common equity.

Comparable Earnings

Q. Please summarize Mr. Bacalao's comparable earnings analysis.

A. Mr. Bacalao used historical return on book equity as reported by Value Line for the

[31] Value Line Investment Survey Ratings & Reports, October 5, 2001, p. 697.

period 1991 to 2000 and forecasted Value Line estimates of return on book equity for the years 2004 through 2006 for the companies in his samples to estimate IPC's cost of equity. He claims that actual book returns provide a less biased view of return levels.[32]

Q. Is the comparable earnings methodology appropriate for determining the cost of common equity?

A. No. The comparable earnings approach, which Mr. Bacalao relied upon to develop two of his cost of common equity estimate for IPC's electric delivery service operations in this proceeding, is badly flawed. The cost of common equity is the market-required rate of return demanded by investors. In contrast, comparable earnings analysis is not a market-based methodology. The comparable earnings method incorrectly implies that the earned or expected rates of return on book common equity are equivalent to the current investor-required rate of return. However, there is simply no basis for this implication. Market-based cost of equity methodologies reflect the investor-required rate of return since the market price of a common stock will not reach equilibrium until the expected rate of return on the common stock equals the investor-required rate of return. In contrast, the return on book equity has no such adjustment mechanism since its denominator, book value,

[32] Prepared Direct Testimony of Enrique Bacalao, p.15.

is immune to market forces.

Q. Has the Commission rejected use of the comparable earnings analysis to measure a utility's cost of equity?

A. Yes. The Commission rejected use of the comparable earnings methodology in Docket Nos. 99-0121, 89-0033, and 92-0448/93-0239 Consol.[33]

DCF Analysis

Q. Please summarize Mr. Bacalao's DCF analysis.

A. Mr. Bacalao used an annual two-step DCF analysis. He used Zacks five-year growth rates for the first stage. Mr. Bacalao used Ibbotson Associates' estimate of the long-run annual rate of inflation to determine the terminal growth rate for the second stage.

Q. Please respond to Mr. Bacalao's criticisms of the DCF analysis.

A. Mr. Bacalao cites three reasons why the DCF model could produce unreasonable estimates of the cost of equity: economic cycle, terminal growth rate, and business

[33] Order, Docket 99-0121, August 25, 1999, p. 68; Order on Remand, Docket No. 89-0033, November 4, 1991, p.15; Order, Docket No. 92-0448/93-0239 Consol., October 11, 1994, p. 173.

cycle. I disagree that those three reasons invalidate the usefulness of DCF analysis.

First, with regard to economic cycle, if earnings growth expectations are depressed due to a recession, then stock prices will decline until the expected return equals the investor required rate of return. Thus, regardless of economic cycle, a company's stock price will reflect its investor's required rate of return.

Second, Mr. Bacalao uses an unreasonable terminal growth rate. Mr. Bacalao is assuming that the company will only grow at the rate of inflation. This implausibly implies the Company will not experience real growth. Thus, Mr. Bacalao's criticism of the terminal growth rate is not applicable to the DCF model in general, but to his implementation of that model.

Third, Mr. Bacalao argues the DCF model may produce unreasonable estimates of the cost of equity depending on the business life cycle of the sample companies. Clearly, the expected growth of a company is a function of business life cycle. For example, a non-constant growth DCF model should be used for companies that are experiencing rapid near-term growth. However, determining the growth rate for the various growth stages for such an analysis is problematic as Mr. Bacalao's own non-constant growth DCF analysis attests. Fortunately, a constant growth

assumption is generally valid for utility companies that operate in mature industries.

Risk Premium Model

Q. Do you have any comments regarding Mr. Bacalao's risk premium analysis?

A. Yes. Mr. Bacalao relied upon historical risk premiums in his risk premium analysis. Historical risk premiums do not adequately measure investors' current return requirements because historical risk premiums are based on realized returns. Due to unpredictable movements in financial markets and the economy, the difference between realized and expected returns can be substantial. Thus, historical premiums are not reliable proxies of current or future risk premiums.

Q. Has the Commission ruled on the use of historical data in determining a company's cost of capital before?

A. Yes. In Docket No. 92-0357, a rate proceeding for Iowa-Illinois Gas and Electric Company, the Commission Order stated, "[t]he Commission notes that the investor-required return on common equity is a forward-looking concept. Mr. Benore [the company witness], in many instances, inappropriately utilized historical data to determine the Company's cost of equity."[34] Similarly, in Docket No. 95-0076, a rate

[34] Order, Docket No. 92-0357, July 21, 1993, p. 66.

proceeding for Illinois-American Water Company, the Commission Order stated, "[t]he Commission also concludes that Staff's criticism of Dr. Phillips' use of two-month average historical stock prices and historical growth rates in his traditional DCF analysis, and historical risk premiums in his risk premium analysis are valid. Historical data is inappropriate in determining a forward-looking cost of equity because it contains information that may no longer be relevant to investors."[35]

CAPM Analysis

Leverage Adjustment

Q. Please summarize the leverage adjustments that Mr. Bacalao made to his CAPM analysis.

Mr. Bacalao modified the beta component of the CAPM to account for the effect of a company's financial leverage on its risk. Mr. Bacalao removed the effect of financial leverage from his sample companies' betas using market-value capital structures to obtain an unlevered beta and then re-levered it using the proposed book-value capital structure of IPC. Mr. Bacalao then used the re-levered betas for his sample companies when estimating the cost of equity with the CAPM

[35] Order, Docket No. 95-0076, December 20, 1995, p. 70.

methodology. [36]

Q. Please define the term financial leverage.

A. Financial leverage is the amount of fixed financial obligations. The greater the proportion of fixed financial obligations to capital, the greater the financial leverage.

Q. Are the leverage adjustments as implemented by Mr. Bacalao appropriate for his CAPM analysis?

A. No. Re-levering the sample companies' betas to IPC's financial leverage increases the implied risk of Mr. Bacalao's sample relative to IPC. Since Value Line safety rank is a function of both operating risk and financial leverage, many of the companies in the sample would no longer receive the same safety ranking if their financial leverage was that of IPC. The electric companies in Mr. Bacalao's sample had an average Value Line beta of .52 and a re-levered beta of .51. The gas distribution companies in Mr. Bacalao's sample had an average Value Line beta of .55 and a re-levered beta .56. The small difference between the Value Line beta and the re-levered beta indicates that the electric and gas distribution companies have financial leverage similar to IPC. In contrast, the beta for the entire sample averages .77, and the relevered beta averages 1.00 indicating that the financial risk

[36] Prepared Direct Testimony of Enrique Bacalao pp. 16-17.

of the sample is lower than IPC. Therefore, if the sample has the same total risk as IPC but lower financial risk (before the beta adjustment) the operating risk of the entire sample must be higher. Thus, the leverage adjustment might result in a sample with the same financial risk as IPC, but operating risk would remain higher. That is, if the total risk of Mr. Bacalao's sample was equal to that of IPC, then his beta adjustment surely resulted n a sample with implied total risk that exceeds that for IPC.

Q. If one assumes that a leverage adjustment is appropriate, did Mr. Bacalao implement the leverage adjustments properly?

A. No. Mr. Bacalao used the market value capital structures of the sample companies to unlever the cost of equity estimates. When re-levering, Mr. Bacalao used IPC's proposed book value capital structure. Essentially, Mr. Bacalao adjusted his market-based CAPM models for application to book value.[37] Consistency is important when implementing the leverage adjustment. Because IPC's common stock is not market traded, its market value of common equity is unobservable. Therefore, if Mr. Bacalao is to be consistent in his leveraging adjustment, he should use an estimated market value capital structure for IPC.

[37] Although it might appear as if book value capital structures imply a greater level of financial leverage than a market value capital structure, such an appearance would be misleading. Capital structure ratios are only indicators of financial leverage, rather than sources of financial leverage. Changing measurement units (i.e., from market values to book values) does not change the degree of financial leverage a firm employs.

Q. Has the Commission ever rejected the use of the leverage adjustments to a utility's cost of equity?

A. Yes. The Commission rejected use of the leverage adjustments in Docket No. 99-0120/99-0134 Consol. and 94-0065.[38]

Risk Premium

Q. Please describe the methods Mr. Bacalao used to determine the risk premium component for the CAPM analysis.

A. Mr. Bacalao averaged the Annual Total Returns of Large Company Stocks and Small Company Stocks to determine the expected market return for his first two CAPM calculations. He then subtracted out the risk-free rate to determine the risk premium. The equity risk premium published by Ibbotson Associates was used to determine the risk premium in his third and forth calculations.

Q. Is Mr. Bacalao's risk premium estimate appropriate?

A. No. Mr. Bacalao used the historical return on large and small-capitalization stocks as a proxy for the current required return on the market. This is problematic for three

[38] Order 99-0120/99-0134 Consol., August 25, 1999, p. 54; Order 94-0065, January 9, 1995, pp. 92-93.

reasons. First historical risk premiums are unreliable proxies for expected return for the reasons stated in the Commission Orders previously cited. Second, the return on small-capitalization stocks is not representative of the stocks against which betas are calculated. Beta is a function of variance of the market returns, thus Mr. Bacalao created a mismatch between beta and the market index. The greater the variance of the market returns, the lower the beta, all else equal. The historical standard deviation for large and small capitalization stock returns is 20.1% and 33.6%, respectively.[39,40] Value line betas are regressed against the NYSE, which contains a much smaller proportion of small capitalization stocks. Thus, the standard deviation of the NYSE is likely to be lower than the standard deviation of a portfolio in which small capitalization stocks are equally weighted with large capitalization stocks. Third, a simple average of large and small company risk premiums over weights the latter since small company stocks account for less than 1% of the total market capitalization proportion of the NYSE and less than 3% of the total market as measured by the Wilshire 5000.[41,42,43]

Q. Does this conclude your direct testimony?

A. Yes.

[39] Standard deviation is the square root of variance.
[40] Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, 2000 Yearbook*, p. 33.
[41] Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, 2000 Yearbook*, p. 140.
[42] Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, 2000 Yearbook*, p. 57.
[43] Wilshire Indexes, www.wilshire.com/Indexes/Broad.Wilshire5000/Characteristics.html, October 31, 2001

Docket No. 01-0628
ICC Staff Exhibit 2.0
Schedule 2.01

Interstate Power Company

Weighted Average Cost of Capital

Component	Balance	Percent of Total Capital	Cost	Weighted Cost
Long-Term Debt	$ 169,257,754	39.02%	7.96%	3.10%
Preferred Equity	$ 36,558,117	8.43%	6.81%	0.57%
Common Equity	$ 227,917,195	52.55%	11.14%	5.85%
Total	$ 433,733,066	100.0%		9.52%

Docket No. 01-0628
ICC Staff Exhibit 2.0
Schedule 2.02

Interstate Power Company
Embedded Cost of Debt

12/31/2000 Series	Coupon	Date Issued	Maturity Date	Original Principal Amount	Face Amount Outstanding	Unamortized Balances Disc/(Prem)	Unamortized Balances Issue Exp.	Carrying Value	Annualized Coupon Int.	Annualized Amortization Disc/(Prem)	Annualized Amortization Issue Exp.	Annualized Int. Exp.
C1	C2	C3	C4	C7	C8	C9	C10	C11	C12	C13	C14	C15
First Mortgage Bonds 8 5/8%	8.63%	9/15/1991	9/15/2021	$25,000,000	$25,000,000	$553,680	$194,223	$24,252,097	$2,156,250	$26,737	$9,379	$2,192,366
First Mortgage Bonds 8.0%	8.00%	2/15/1992	2/15/2007	$25,000,000	$25,000,000	$186,821	$69,515	$24,743,664	$2,000,000	$30,501	$11,349	$2,041,850
First Mortgage Bonds7 5/8%	7.63%	5/15/1993	5/15/2023	$94,000,000	$94,000,000	$2,008,971	$305,050	$91,685,979	$7,167,500	$30,187	$4,579	$7,202,266
Total				$144,000,000	$144,000,000	$2,749,472	$568,788	$140,681,740	$11,323,750	$87,425	$25,307	$11,436,482

Pollution Control Bonds	Coupon	Date Issued	Maturity Date	Original Principal Amount	Face Amount Outstanding	Unamortized Balances Disc/(Prem)	Unamortized Balances Issue Exp.	Carrying Value	Annualized Coupon Int.	Annualized Amortization Disc/(Prem)	Annualized Amortization Issue Exp.	Annualized Int. Exp.
	C2	C3	C4	C7	C8	C9	C10	C10	C11	C13	C14	C13
Lansing- 6.30% Series A	6.30%	6/1/1994	5/1/2010	$5,600,000	$5,600,000	$0	$107,249	$5,492,751	$352,800	$0	$8,017	$360,817
Lansing- 5.75% Series B	5.75%	6/1/1994	6/1/2003	$1,000,000	$1,000,000	$0	$8,851	$991,149	$57,500	$0	$3,288	$60,788
Clinton- 6.35% Series A	6.35%	6/1/1994	12/1/2012	$5,650,000	$5,650,000	$0	$118,291	$5,531,709	$358,775	$0	$6,253	$365,028
Clinton- 6.25% Series B	6.25%	6/1/1994	4/1/2009	$1,000,000	$1,000,000	$0	$18,238	$981,762	$62,500	$0	$1,601	$64,101
Lansing- 4.30% Series	4.30%	11/30/1998	11/1/2008	$2,300,000	$2,300,000	$0	$63,121	$2,236,879	$98,900	$0	$5,728	$104,628
Debuque- 4.30% Series	4.30%	11/30/1998	11/1/2005	$2,650,000	$2,650,000	$0	$63,192	$2,586,808	$113,950	$0	$9,463	$123,413
Neal #4 - 4.2% Series	4.20%	3/23/1999	1/1/2013	$7,700,000	$7,700,000	$0	$119,765	$7,580,235	$323,400	$0	$3,075	$326,475
Fox Lake #3- 4.05% Series	4.05%	2/11/1999	2/1/1999	$3,250,000	$3,250,000	$0	$75,280	$3,174,720	$131,625	$0	$3,985	$135,610
Total				$29,150,000	$29,150,000	$0	$573,987	$28,576,013	$1,499,450	$0	$41,410	$1,540,860

Reaquired Debt	Coupon	Date Issued	Maturity Date	Original Principal Amount	Face Amount Outstanding		Unamortized Loss	Carrying Value	Annualized Coupon Int.	Annualized Amortization Disc/(Prem)	Annualized Amortization Issue Exp.	Annualized Loss
	C2	C3	C4	C7	C8	C9	C10	C10	C11	C13	C14	C13
10% FMB-due 2004							$352,829	-$352,829				$57,605
10 1/4% FMB-due 2005							$235,547	-$235,547				$38,457
7 3/4% FMB-due 1999							$131,373	-$131,373				$1,974
8 5/8% FMB-due2001							$830,207	-$830,207				$12,475
8 3/8% FMB-due 2002							$482,147	-$482,147				$7,245
9% FMB-due 2008							$1,748,357	-$1,748,357				$26,271
Louisa 10 3/4% PCB-due 2012							$86,544	-$86,544				$7,262
Lansing A 7 1/4% PCB-due 2010							$39,966	-$39,966				$2,988
Lansing B 7 1/4% PCB-due 2003							$3,185	-$3,185				$1,183
Kapp A 7 1/8% PCB-due 2012							$72,731	-$72,731				$3,844
Kapp B 7 1/8% PCB-due 2009							$11,823	-$11,823				$1,038
Neal #3 6 3/8% PCB-due 2013							$41,200	-$41,200				$3,433
Fox Lake 6 3/8% PCB-Due 2010							$18,869	-$18,869				$2,077
Total				$0	$0	$0	$4,054,778	-$4,054,778	$0	$0	$0	$165,852

Total Long-Term Debt				$173,150,000	$173,150,000	$2,749,472	$5,197,553	$165,202,975	$12,823,200	$87,425	$66,717	$13,143,194

Embeded Cost of Long-Term Debt **7.96%**

Docket No. 01-0628
ICC Staff Exhibit 2.0
Schedule 2.03

Interstate Power Company

Embedded Cost of Preferred Stock

Preferred Stock Issuance	Shares Outstanding	Balance Outstanding	Unamortized Premium	Unamortized Discount	Total Balance	Annual Dividends	Amortization of Expense	Amortization of Discount	Total
4.36% Dividend Series	60,455	$ 3,022,750	$ 7,436		$ 3,030,186	$ 131,792	$ -		$ 131,792
4.68% Dividend Series	55,926	$ 2,796,300	$ 25,670		$ 2,821,970	$ 130,867	$ -		$ 130,867
7.76% Dividend Series	100,000	$ 5,000,000	$ 42,300		$ 5,042,300	$ 388,000	$ -		$ 388,000
6.40% Dividend Series	545,000	$ 27,250,000		$ 1,586,339	$ 25,663,661	$ 1,744,000	$ -	$ 93,543	$ 1,837,543
Total Preferred Stock	761,381	$ 38,069,050	$ 75,406	$ 1,586,339	$ 36,558,117	$ 2,394,659	$ -	$ 93,543	$ 2,488,202

Embeded Cost of Preferred Stock 6.81%

Docket No. 01-0628
ICC Staff Exhibit 2.0
Schedule 2.04

Interstate Power Company
Growth Rates

Electric Sample

	Company	Zacks Earnings	IBES Earnings	Average
1	Allegheny Energy	9.11%	10.00%	9.56%
2	Ameren Corp.	4.00%	5.00%	4.50%
3	American Electric Power	6.67%	7.00%	6.84%
4	Consolidated Edison	3.93%	4.30%	4.12%
5	Empire District		6.00%	6.00%
6	FPL Group	7.12%	7.00%	7.06%
7	Great Plains Energy	6.00%	5.00%	5.50%
8	Idacorp	10.00%	8.00%	9.00%
9	Nstar	6.40%	7.00%	6.70%

Gas Sample

	Company	Zacks Earnings	IBES Earnings	Average
1	AGL Resources	6.85%	6.75%	6.80%
2	Atmos Energy Corp.	6.31%	6.33%	6.32%
3	Laclede Gas Company	7.50%	3.00%	5.25%
4	Nicor	6.38%	5.90%	6.14%
5	Northwest Natural Gas	6.25%	4.64%	5.45%
6	Peoples Energy Corporation	6.80%	5.57%	6.19%
7	Piedmont Natural Gas Company	6.75%	4.75%	5.75%
8	WGL Holding Company	5.88%	4.40%	5.14%

Docket No. 01-0628
ICC Staff Exhibit 2.0
Schedule 2.05

Interstate Power Company

Electric Sample

	Company	Current Dividend $D_{0,1}$	$D_{0,2}$	$D_{0,3}$	$D_{0,4}$	Next Dividend Payment Date	Stock Price
1	Allegheny Energy	$ 0.430	$ 0.430	$ 0.430	$0.430	12/28/2001	$ 37.080
2	Ameren Corp.	-	0.635	0.635	0.635	12/28/2001	$ 41.110
3	American Electric Power	0.600	0.600	0.600	0.600	3/8/2002	$ 43.510
4	Consolidated Edison	0.550	0.550	0.550	0.550	3/15/2002	$ 39.600
5	Empire District	-	0.320	0.320	0.320	12/15/2001	$ 21.180
6	FPL Group	0.540	0.560	0.560	0.560	12/17/2001	$ 55.010
7	Great Plains Energy	-	0.415	0.415	0.415	12/20/2001	$ 24.610
8	Idacorp	0.465	0.465	0.465	0.465	2/28/2002	$ 38.360
9	Nstar	0.515	0.515	0.515	0.515	2/1/2002	$ 43.220

Gas Sample

	Company	Current Dividend $D_{0,1}$	$D_{0,2}$	$D_{0,3}$	$D_{0,4}$	Next Dividend Payment Date	Stock Price
1	AGL Resources	$ 0.270	$ 0.270	$ 0.270	$0.270	3/1/2002	$ 21.770
2	Atmos Energy Corp.	0.290	0.290	0.290	0.290	12/10/2001	$ 21.220
3	Laclede Gas Company	-	0.335	0.335	0.335	1/2/2002	$ 24.400
4	Nicor	0.415	0.440	0.440	0.440	2/1/2002	$ 38.680
5	Northwest Natural Gas	0.310	0.310	0.310	0.315	2/15/2002	$ 24.360
6	Peoples Energy Corporation	0.500	0.500	0.510	0.510	1/15/2002	$ 39.160
7	Piedmont Natural Gas Company	0.365	0.385	0.385	0.385	1/15/2002	$ 33.330
8	WGL Holding Company	0.310	0.315	0.315	0.315	2/1/2002	$ 27.800

Docket No. 01-0628
ICC Staff Exhibit 2.0
Schedule 2.06

Interstate Power Company
Expected Quarterly Dividends

Electric Sample

Company	$D_{1,1}$	$D_{1,2}$	$D_{1,3}$	$D_{1,4}$
Allegheny Energy	$ 0.471	$ 0.471	$ 0.471	$ 0.471
Ameren Corp.	0.635	0.664	0.664	0.664
American Electric Power	0.641	0.641	0.641	0.641
Consolidated Edison	0.573	0.573	0.573	0.573
Empire District	0.320	0.339	0.339	0.339
FPL Group	0.560	0.600	0.600	0.600
Great Plains Energy	0.415	0.438	0.438	0.438
Idacorp	0.507	0.507	0.507	0.507
Nstar	0.550	0.550	0.550	0.550

Gas Sample

Company	$D_{1,1}$	$D_{1,2}$	$D_{1,3}$	$D_{1,4}$
AGL Resources	0.288	0.288	0.288	0.288
Atmos Energy Corp.	0.295	0.295	0.295	0.295
Laclede Gas Company	0.335	0.353	0.353	0.353
Nicor	0.440	0.467	0.467	0.467
Northwest Natural Gas	0.315	0.315	0.315	0.332
Peoples Energy Corporation	0.510	0.510	0.542	0.542
Piedmont Natural Gas Company	0.385	0.407	0.407	0.407
WGL Holding Company	0.315	0.331	0.331	0.331

Docket No. 01-0628
ICC Staff Exhibit 2.0
Schedule 2.07

Interstate Power Company
DCF- Cost of Equity Estimate

Electric Sample

	Company	Cost of Equity Estimate
1	Allegheny Energy	15.01%
2	Ameren Corp.	11.24%
3	American Electric Power	12.96%
4	Consolidated Edison	10.07%
5	Empire District	12.74%
6	FPL Group	11.61%
7	Great Plains Energy	12.99%
8	Idacorp	14.53%
9	Nstar	12.03%
	Average	12.58%

Gas Sample

	Company	Cost of Equity Estimate
1	AGL Resources	12.31%
2	Atmos Energy Corp.	12.25%
3	Laclede Gas Company	11.26%
4	Nicor	11.11%
5	Northwest Natural Gas	10.89%
6	Peoples Energy Corporation	11.83%
7	Piedmont Natural Gas Company	10.80%
8	WGL Holding Company	10.03%
	Average	11.31%

Docket No. 01-0628
ICC Staff Exhibit 2.00
Schedule 2.08

Interstate Power Company

Risk Premium Analysis

Interest Rates as of November 14, 2001

U.S. Treasury Bills		U.S. Treasury Bonds	
Discount Rate	Effective Yield	Bond Equivalent Yield	Effective Yield
1.84%	1.89%	5.02%	5.08%

Risk Premium Cost of Equity Estimates

Risk-Free Rate Proxy is the U.S. Treasury Bond

Electric Sample

Risk-Free Rate		Beta		Risk Premium		Cost of Common Equity
5.08%	+	0.51	*	(15.30% - 5.08%)	=	10.30%

Gas Sample

Risk-Free Rate		Beta		Risk Premium		Cost of Common Equity
5.08%	+	0.58	*	(15.30% - 5.08%)	=	10.96%

Docket No. 01-0628
ICC Staff Exhibit 2.0
Schedule 2.09

Interstate Power Company
Risk Comparison

Electric Sample

	Company	S&P Rating	S&P Business Position
1	Allegheny Energy Inc.	A	5
2	Ameren Corp.	A+	5
3	American Electric Power	A-	4
4	Consolidated Edison	A	5
5	Empire District	A-	5
6	FPL Group	A	6
7	Great Plains Energy	A-	6
8	Idacorp	A+	5
9	Nstar	A	3
	Average	A	4.89

Gas Sample

	Company	S&P Rating	S&P Business Position
1	AGL Resources	A-	3
2	Atmos Energy Corp.	A-	4
3	Laclede Gas Company	AA-	3
4	Nicor	AA	3
5	Northwest Natural Gas	A	3
6	Peoples Energy Corporation	A+	4
7	Piedmont Natural Gas Company	A	3
8	WGL Holdings Inc.	AA-	3
	Average	A/A+	3.25
	Interstate Power Company	A+	4